

Claims:

[C1]

1. A system for neural modulation in the treatment of disease, comprising:
 - (A) a sensor array in electronic communication with a signal conditioning circuit;
 - (B) a control circuit in electronic communication with said signal conditioning circuit;
 - (C) an output stage circuit in electronic communication with said control circuit; and
 - (D) a stimulating electrode array, in electronic communication with said output circuit.

[C2]

2. A system for neural modulation in the treatment of disease, comprising:
 - (A) a sensor array in electronic communication with a control circuit;
 - (B) an output stage circuit in electronic communication with said control circuit; and
 - (C) a stimulating electrode array, in electronic communication with said output circuit.

[C3]

3. A system as recited in claim 1, said control circuit employing a calculation of a measure of chaos.

[C4]

4. A system as recited in claim 2, said control circuit employing a calculation of a measure of chaos.

[C5]

5. A system as recited in claim 1, said control circuit employing the calculation of entropy.

[C6]

6. A system as recited in claim 2, said control circuit employing the calculation of entropy.

[C7]

7. A system as recited in claim 1, said control circuit employing the calculation of a Lyupanov exponent.

[C8]

8. A system as in claim 2, said control circuit employing the calculation of a Lyupanov exponent.

[C9]

9. A system as recited in claim 1, said control circuit employing the calculation of a maximal Lyupanov exponent.

[C10]

10. A system as recited in claim 1, said control circuit employing the calculation of a maximal Lyupanov exponent.

[C11]

11. A system for neural modulation in the treatment of disease, comprising:
 - (A) a system enclosure, in mechanical communication with calvarium;
 - (B) a control circuit enclosed within said system enclosure and in electronic communication with an output stage;
 - (C) a stimulating electrode array, in electronic communication with said output circuit.

[C12]

12. A system for neural modulation in the treatment of disease, comprising:
 - (A) a system enclosure, in mechanical communication with calvarium;
 - (B) a sensor array in electronic communication with a control circuit;
 - (C) an output stage circuit in electronic communication with said control circuit;
and
 - (D) a stimulating electrode array, in electronic communication with said output circuit.

[C13]

13. A system for neural modulation in the treatment of disease, comprising:
 - (A) a system enclosure, in mechanical communication with calvarium;
 - (B) a sensor array in electronic communication with said signal conditioning circuit;
 - (C) a control circuit in electronic communication with said signal conditioning circuit;
 - (D) an output stage circuit in electronic communication with said control circuit;
and
 - (E) a stimulating electrode array, in electronic communication with said output circuit.

[C14]

14. A system for neural modulation in the treatment of disease, comprising:
 - (A) a system enclosure, in mechanical communication with calvarium;
 - (B) a sensor array in electronic communication with a signal conditioning circuit;
 - (C) a signal processor in electronic communication with said signal conditioning

circuit;

- (D) a control circuit in electronic communication with said signal processor;
- (E) an output stage circuit in electronic communication with said control circuit;
 - and
- (F) a stimulating electrode array, in electronic communication with said output circuit.

[C15]

- 15. A system as recited in claim 11, wherein said system enclosure enclosing at least one of sensor array, control circuit, output stage, and stimulating electrode array.

[C16]

- 16. A system as in claim 12, wherein said system enclosure enclosing at least one of sensor array, control circuit, output stage, and stimulating electrode array.

[C17]

- 17. A system as recited in claim 13, wherein said system enclosure enclosing at least one of sensor array, control circuit, output stage, and stimulating electrode array.

[C18]

- 18. A system as recited in claim 14, wherein said system enclosure enclosing at least one of sensor array, control circuit, output stage, and stimulating electrode array.

[C19]

- 19. A system as recited in claim 11, wherein said control circuit employing the calculation of a measure of chaos.

[C20]

20. A system as recited in claim 11, wherein said control circuit employing the calculation of entropy.

[C21]

21. A system as recited in claim 11, wherein said control circuit employing the calculation of a Lyupanov exponent.

[C22]

22. A system as recited in claim 11, wherein said control circuit employing the calculation of a maximal state control.

[C23]

23. A system as recited in claim 11, said control circuit employing the calculation of seizure prediction.